Chapter xii. contains some interesting paradoxes, especially those dealing with infinity. One of these may be briefly cited (pp. 241–243). If we suppose that a straight line is bisected and each half again bisected, and so on, and if we imagine that a limit exists when the segments become indivisible, we obtain, according to the author, an impossible result when we apply the method to the repeated bisection of a side and the diagonal of a square. Here, again, the present reviewer does not consider that the author of this book has quite arrived at the right explanation. If a line is made up of indivisible elements, this would seem to mean that it consists of a series of points, and unless the number of such points is an exact power of two the process of successive bisection will stop short long before the infinitesimal elements have been reached.

In the section dealing with "truth" the author classifies the various kinds of truth under different headings, such as that which is accepted as true, that which has been proved to be true by one or more experimental tests, that which has never been shown to be false, that which is in agreement with our laws of thought or with assumptions. He also devotes a whole chapter to the discussion of "half truths."

In expressing a doubt as to how far the author has succeeded in getting "nearer the truth," it must be admitted that the author has every right to attempt to place the remarks of the reviewer in one of his following categories: "The decision is true," "The decision is not true," "The decision is half true," "The decision is only true under certain conditions." But an equal right is possessed by any student of philosophy who will read the book, and it will probably be better if this test is applied to the book itself rather than to the very superficial and impressionistic description of a work of 523 pages which has been possible in the present limited space.

PRECURSORS OF CHRISTIANITY.

The Golden Bough: a Study in Magic and Religion. By Prof. J. G. Frazer. Third edition. Part iv., Adonis, Attis, Osiris: Studies in the History of Oriental Religion. Third edition, revised and enlarged. Vol. i., pp. xvii+317. Vol. ii., pp. x+321. (London: Macmillan and Co., Ltd., 1914.) Price, 2 vols., 20*s.* net.

THE historical applications of Prof. Frazer's researches in early religion may be said to culminate in his study of the distinctive cults of ancient Syria, Phrygia, and Egypt. For through the agency of these three worships, spreading as they did through Greco-Roman Europe two thousand years ago, a continuity was established between the barbarism which was past and the civilisation which was coming. The link thus formed was, not to put too fine a point upon it, the Christian religion. Prof. Frazer regards the founder of Christianity as a historical personage, like Buddha, and both religions, so similar in their ideals, as ethical revolutions, aiming at a higher life than was possible for the majority of mankind.

"Both systems were in their origin essentially ethical reforms, born of the generous ardour, the lofty aspirations, the tender compassion of their noble Founders, two of those beautiful spirits who appear at rare intervals on earth, like beings come from a better world to support and guide our weak and erring nature. Both preached moral virtue as the means of accomplishing what they regarded as the supreme object of life, the eternal salvation of the individual soul, though by a curious antithesis the one sought that salvation in a blissful eternity, the other in a final release from suffering, in annihilation."

The author goes on to describe the process of accommodation—

"but the austere ideals of sanctity which they inculcated were two deeply opposed, not only to the frailties, but to the natural instincts of humanity ever to be carried out in practice by more than a small number of disciples. . . . If such faiths were to be nominally accepted by whole nations or even by the world, it was essential that they should first be modified or transformed so as to accord in some measure with the prejudices, the passions, the superstitions of the vulgar."

This is much in the style of Gibbon, and has a similar, though more sympathetic, spirit. The Protestantism of the early Christians was—

"exchanged for the supple policy, the easy tolerance, the comprehensive charity of shrewd ecclesiastics, who clearly perceived that if Christianity was to conquer the world, it could only do so by relaxing the too rigid principles of its Founder, by widening a little the narrow gate which leads to salvation."

One great lesson of these volumes is what may be called the permanent appeal of the elements of primitive superstition; another is the way in which Christianity has taken up those elements and transmuted them. It is the eternal compromise between the primitive and the modern in man.

"Yet it would be unfair," the author well adds, "to the generality of our kind to ascribe wholly to their intellectual and moral weakness the gradual divergence of Buddhism and Christianity from their primitive patterns. For it should never be forgotten that by their glorification of poverty and celibacy both these religions struck straight at the root, not merely of civil society,

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but of human existence. The blow was parried by the wisdom or the folly of the vast majority of mankind, who refused to purchase a chance of saving their souls with the certainty of extinguishing the species."

The substance of "Adonis, Attis, Osiris" is the story of how their faiths provided the machinery for Christianity. The moral of it is the historical appraisement of Occidental religion in modern culture which the student who runs may read.

A. E. Crawley.

HABERLANDT'S PLANT ANATOMY.

Physiological Plant Anatomy. By Prof. G. Haberlandt. Translated from the fourth German edition by Montagu Drummond. Pp. xv + 777. (London: Macmillan and Co., Ltd., 1914.) Price 25*s.* net.

ANATOMY, whether of animals or of plants, is apt to prove dull reading if treated merely from the descriptive point of view. Such books we know; some have even been translated into English—it is hard to say why, for they are mere repositories of dry facts, and the individual dry bones, one would have thought, could well enough have been dug out of the original treatises whenever they were wanted. It is only when it is related to, or becomes part of, a larger and more philosophical scheme that anatomy becomes attractive to the ordinary scientifically minded reader who is not a specialist in the subject.

The great charm of Prof. Haberlandt's book has always lain rather in the circumstance that the anatomical facts had there been welded into a coherent theme of which the *leit motiv* was Function. It is true that speculation sometimes usurps the place of proof, and that teleology now and then breaks out, cloaked but thinly in the disguise of physiology. But it is a great book, and the fact that it has passed through four German editions, each an improvement on its predecessor, is a testimony to its intrinsic value.

Now that it is accessible to the English reader who happens to be unacquainted with German, its influence will be more widely felt amongst the students of botany in English-speaking countries. It deserves to be well received, for Mr. Drummond has discharged his task with ability, and by deciding on a somewhat free style of translation he has succeeded in producing a very readable volume which contains but little trace of its exotic origin.

In so far as we have tested the translation, we have lighted upon remarkably few errors of any importance; but perhaps it is not altogether superfluous to point out one instance in which a closer adherence to the text would have been of advantage. On p. 550, in discussing the relations existing between the assumed micellar structure and differential imbibition, the micellæ are said to "cohere with different intensities in different tangential planes." By translating the German word *richtungen* (directions) as *planes*, the meaning of the passage is obscured, and a situation already sufficiently complicated is rendered less intelligible.

It may be questioned whether any good purpose has been secured by placing all the notes at the end of the book, instead of grouping them with the chapters to which they severally belong, as they appear in the German edition. But this is, after all, a trifling matter, and at the most detracts but little from the excellent form in which a valuable and indeed classical work has been presented to the English reader.

J. B. F.

ELECTROTECHNICS.

(1) *Switchgear and the Control of Electric Light and Power Circuits.* By A. G. Collis. Pp. 85. (London: Constable and Co., Ltd., 1913.) Price 1*s.* net.

(2) *Elementary Theory of Alternate Current Working.* By Capt. G. L. Hall. Pp. vi + 195. (London: *The Electrician* Printing and Publishing Co., Ltd., n.d.) Price 3*s.* 6*d.* net.

(3) *Electricity in Mining.* With plans and illustrations. Siemens Brothers Dynamo Works, Ltd. Pp. xiv + 201. (London: C. Griffin and Co., Ltd., 1913.) Price 10*s.* 6*d.* net.

(4) *Electric Circuit Theory and Calculations: a Practical Book for Engineers, Students, Contractors, and Wiremen.* By W. Perren Maycock. Pp. xiv + 355. (London and New York: Whittaker and Co., 1913.) Price 3*s.* 6*d.* net.

(1) IN the preface to this manual the reader is referred for further information to the author's larger work on the subject. The present book would have been more valuable had it been carefully prepared. Some of the diagrams of the connections are inaccurate, and it is very difficult to make out what they mean.

(2) This work can be well recommended to those who are seeking the elementary theory of the subject. It has been compiled with accuracy and care, and forms a good introduction to the larger works on the subject of alternate current working. The latest developments are dealt with, and the whole treated in a simple manner without the aid of advanced mathematics.

(3) The novelty attaching to this work lies in the fact that it is compiled by a firm of electrical engineers. It is not a mere catalogue or description of electrical apparatus, but goes further, and deals with the technical part of the subject. The illustrations are good, and the book is well produced.

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